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***ASSIGNMENT-3***

1. *Problem 1 solution*

CLASS PhoneBill

BEGIN

METHOD MAIN

BEGIN

READ the input\_value for account number and service code from the user

acc\_no 🡨 input\_value for account number

service\_code 🡨 input\_value for the type of service

PRINT Account Number: acc\_no

PRINT Service Code: service\_code

FOR (service\_code==r OR R)

READ input\_value for the number of minutes from the user

minutes🡨input\_value for the number of minutes

IF ( minutes<=50) THEN

fee 🡨15.00

ELSE

fee 🡨15.00+(minutes-50)\*0.50

END IF

PRINT Amount due: fee

END FOR

FOR (service\_code==p OR P)

READ input\_value from the user for the number of minutes in daytime and nighttime

daytime\_minutes🡨 input\_value for the number of minutes talked between 6:00am to 6:00pm

nighttime\_minutes🡨input\_value for the number of minutes talked between 6:00pm to 6:00am.

PRINT Daytime minutes: daytime\_minutes

PRINT Nighttime\_minutes: nighttime\_minutes

FOR (daytime\_minutes)

IF (daytime\_minutes<=50) THEN

fee🡨0.00

ELSE

fee🡨(daytime\_minutes – 50)\*0.20

END IF

END FOR

FOR (nighttime\_minutes)

IF (nighttime\_minutes<=100) THEN

fee🡨0.00

ELSE

fee🡨(nighttime\_minutes – 100)\*0.10

END IF

END FOR

PRINT Amonut due: fee

END FOR

END MAIN

END PhoneBill

1. CLASS BestDeal

BEGIN

METHOD MAIN

BEGIN

READ the input\_value for the price and weight of two boxes from the user

small\_weight 🡨 input\_value of small weight

small\_price 🡨 input\_value of small price

large\_weight 🡨 input\_value of large weight

large\_price 🡨 input\_value of large price

PRINT Small box weight: small\_weight

PRINT Small box price: small\_price

PRINT Large box weight: large\_weight

PRINT Large box price: large\_price

IF ((small\_weight)\*2 <= large\_weight &&

(small\_price)\*2 > large\_price) THEN

PRINT Judgment: The large box is a better deal

ELSE IF((small\_weight)\*2 >= large\_weight && (small\_price)\*2 < large\_price)

PRINT Judgment: The smaller box is a better deal

ELSE

PRINT Judgment: Both boxes are of same value

END IF

END MAIN

END BestDeal

1. CLASS Circles

BEGIN

METHOD MAIN

BEGIN

READ the input\_values for the coordinates of center of two circles and the radius of those circles

X1 🡨 x- coordinate of circle 1

X2 🡨 x- coordinate of circle 2

Y1 🡨 y-coordinate of circle 1

Y2 🡨 y-coordinate of circle 2

R1 🡨 radius of circle 1

R2 🡨 radius of circle 2

PRINT Circle 1 center is: (X1,Y1)

PRINT Circle 1 radius is: R1

PRINT Circle 2 center is: (X2,Y2)

PRINT Circle 2 radius is: R2

sum\_radius 🡨 R1 + R2

distance\_center 🡨 ((X2 – X1)^2 + (Y2 – Y1)^2)^1/2

IF (R2 >=R1 )

IF(distance\_center <= (R2 – R1))

PRINT Judgment: Circle 1 is completely outside Circle 2

ELSE IF( R1>=R2 )

IF(distance\_center <=(R1 – R2))

PRINT Judgment: Circle 2 is completely inside Circle 1

ELSE IF (distance\_center > sum\_radius)

PRINT Judgment: Circle 2 is completely outside Circle 1

ELSE

PRINT Judgment: Circle 2 overlaps Circle 1

END IF

END MAIN

END BestDeal

1. CLASS IncomeTax

BEGIN

METHOD MAIN

BEGIN

READ input\_value for the annual income from the user

annual\_income 🡨 input\_value from the user

PRINT Annual Income: annual\_income

IF (annual\_income <= 50000)

PRINT Tax Bracket: 5%

tax 🡨 (5/100)\*annual\_income

PRINT Tax due amount: tax

ELSE IF (annual\_income > 50000 && annual\_income <= 200000)

PRINT Tax Bracket: 10%

tax 🡨 (10/100)\*annual\_income

PRINT Tax due amount: tax

ELSE IF (annual\_income > 200000 && annual\_income <= 400000)

PRINT Tax Bracket: 15%

tax 🡨 (15/100)\*annual\_income

PRINT Tax due amount: tax

ELSE IF (annual\_income > 400000 && annual\_income <= 900000)

PRINT Tax Bracket: 25%

tax 🡨 (25/100)\*annual\_income

PRINT Tax due amount: tax

ELSE

PRINT Tax Bracket: 35%

tax 🡨 (35/100)\*annual\_income

PRINT Tax due amount: tax

END IF

END MAIN

END IncomeTax

1. CLASS FiveDigitPalindrome

BEGIN

METHOD MAIN

BEGIN

READ input\_value for a number from the user

num 🡨input\_value for a number

PRINT Entered number: num

reverse\_num 🡨num

sum 🡨0

WHILE (num > 0)

rem 🡨num%10

sum🡨sum + rem

num=num/10

END WHILE

IF (sum == reverse\_num)

PRINT Judgment: Valid 5-digit palindrome

ELSE IF (sum !=reverse\_num)

PRINT Judgment: Invalid 5-digit palindrome

ELSE

PRINT Judgment: Invalid 5-digit number. Try again

END IF

END MAIN

END FiveDigitPalindrome